15. Prior to January 1993, Suntrol and Edwards began to complain to Phifer that its regular business of installing solar screening was being subsumed by the amount of warranty replacement work under the Phifer warranty program. Suntrol and Edwards complained that it was losing opportunities for new installations because of the extensive time and effort it was expending under the warranty program. Suntrol also contended that it was not being adequately compensated by Phifer for replacement work being done and, thus, demanded a higher rate of compensation for future work and additional compensation for warranty replacement work already completed.

16. Suntrol and Edwards, in late 1992 and January 1993, continued to demand increased compensation from Phifer for the warranty replacement work and threatened to file suit against Phifer unless Phifer agreed to increase its compensation to Suntrol for future warranty replacement and to compensate Suntrol and Edwards for alleged past underpayments.

17. In order to ensure a continuation of its warranty replacement program in the State of Arizona, Phifer reached an agreement with Suntrol and Edwards in January 1993, whereby compensation to Suntrol for future warranty replacement work was increased and a one time payment of $100,000 was made by Phifer to Suntrol as additional compensation for past warranty replacement work by Suntrol. Additionally, Edwards agreed to release Phifer from any legal claims, effective upon sixty days from the date of the January, 1993 contract. See, January 29, 1993, Contract attached hereto as Exhibit "B" and incorporated herein by this reference.

18. Subsequent to execution of the January 29, 1993, agreement between Phifer, Edwards and Suntrol, Phifer received information which led it to believe that Edwards and Suntrol had been filing false claims for warranty replacement work both prior to and following execution of the January 29, 1993, agreement. Phifer accordingly began an investigation of the claims submitted by Suntrol for warranty

386

replacement of SunScreen product.

19. Phifer's investigation determined that over a course of several years Edwards and Suntrol had been approaching homeowners and residents of property at which Suntrol had previously installed Phifer SunScreen and actively solicited permission to replace the SunScreen, at no cost to the owner, homeowner or resident, regardless of whether the original SunScreen was defective or covered by Phifer's warranty replacement program.

20. In addition, Phifer's investigation revealed that Suntrol and Edwards demanded and received compensation from Phifer for replacement of allegedly "defective" SunScreen that Suntrol and Edwards knew, prior to replacement, had been in service for more than five years and, therefore, was not covered by the Phifer warranty and was not eligible for replacement under Phifer's Defective SunScreen Replacement Program.

21. Moreover, it was determined that Suntrol and Edwards demanded and received compensation from Phifer for replacement of "defective SunScreen" that Suntrol and Edwards knew, prior to replacement, was not manufactured by Phifer and was, in fact, solar screening produced by a manufacturer other than Phifer.

22. For a period of several years between 1990 and 1993, Suntrol accounted for defective SunScreen material replaced under the warranty program, at least in part, by turning "defective" material over to Aluminum Sun Control, a Phifer distributor, which would estimate the total square footage by weighing the material and converting the weight to square footage based on a mathematical formula. Phifer found out that Edwards and Suntrol instructed Suntrol employees, however, to soak the material in water, prior to delivery to Aluminum Sun Control, so as to add to the weight of the allegedly defective material, thus exaggerating the quantity of SunScreen actually replaced and increasing the amount of compensation paid by Phifer to Suntrol. Said

389

"soaking" in turn led to demands and receipt by Suntrol of excessive compensation paid by Phifer in the form of free material from Aluminum Sun Control in addition to the amount of SunScreen product actually replaced.

23. Phifer uncovered that Suntrol and Edwards claimed and received payment for replacement of the Phifer SunScreen in certain buildings, even though the original SunScreen installed was in good condition and performed properly. In fact, Suntrol and Edwards submitted claims for replacement at locations in which the original SunScreen remained and had never been replaced; the homeowners at those locations had not complained to Suntrol or anyone else regarding the SunScreen, had never contacted, been contacted by, or ever heard of Suntrol or its representatives.

24. As part of the above activities, Suntrol and Edwards created false work orders for warranty replacement of Phifer SunScreen that was never done. These false work orders were submitted to Phifer as warranty replacement claims and Phifer subsequently paid compensation to Suntrol for work that was never actually done.

25. Upon discovery of Suntrol and Edwards' practice of submitting false claims, Phifer contacted Suntrol and instructed it that Suntrol would no longer be authorized or approved for further warranty replacement work of Phifer products. Phifer also notified several of its customers, in March 1993, that Suntrol was no longer authorized or approved to do further warranty replacement work for Phifer SunScreen products.

COUNT ONE

(Breach of Contract)

26. Counterclaimant hereby incorporates by reference the allegations set forth in Paragraph 1 through 25 above as if fully set forth herein.

27. In 1989, Suntrol and Edwards agreed to participate with Phifer in a warranty or replacement program for Phifer SunScreen screens manufactured between

January, 1988 and July, 1989 on which the polymer coating used during that period prematurely deteriorated upon direct exposure to intense sunlight.

28. Counterdefendants agreed to do warranty replacement work under Phifer's program at no charge to the ultimate consumer, contractor or building owner so long as it could be shown that the SunScreen material involved was defective, i.e., was manufactured in January, 1988 and July, 1989, was installed within the previous five years and had turned black.

29. Phifer in turn agreed to reimburse Suntrol at a set rate for the warranty replacement work performed, based on the square footage of defective SunScreen replaced.

30. Phifer fully performed its contractual obligations towards Counterdefendants at all times and fully compensated Counterdefendants for the warranty replacement submitted at the agreed-upon rate of compensation.

31. Counterdefendants breached their agreement with Phifer by:

(a) Submitting false claims and accepting full compensation for warranty replacement work that had not been performed;

(b) Submitting claims and accepting compensation for warranty replacement of SunScreen material that was not manufactured nor installed during the period covered by Phifer's warranty replacement program;

(c) Submitting claims and accepting compensation for warranty replacement of SunScreen material that was in good condition and that was not defective, and, therefore, was not covered by Phifer's warranty replacement program;

(d) Submitting claims and accepting compensation for warranty replacement of screening material that was not, in fact, manufactured by Phifer; and

(e) Submitting claims and accepting compensation for replacement of screening material in excess of the material actually replaced by

391

Defendant.

COUNT TWO

(Fraud)

32. Phifer hereby incorporates by reference the allegations set forth in Paragraphs 1 through 31 above as if fully set forth herein.

33. Suntrol and John Edwards, represented to Phifer that certain warranty replacement work had been completed even though Suntrol and Edwards knew at the time or recklessly disregarded the fact that the replacement work had not been done.

34. Suntrol and Edwards represented to Phifer that screening material covered by Phifer's warranty program had been replaced even though Suntrol and Edwards knew at the time or recklessly disregarded the fact that the actual material replaced was neither manufactured nor installed within the period covered by Phifer's replacement program.

35. Suntrol and Edwards represented to Phifer that SunScreen material being replaced was defective even though Suntrol and Edwards knew at the time or recklessly disregarded the fact that such material was in good condition, performed properly and was not defective.

36. Suntrol and Edwards represented to Phifer that certain quantities of SunScreen material had been replaced, even though Suntrol and Edwards knew at the time, or recklessly disregarded the fact that the quantity of such material was actually less than that represented.

37. Suntrol and Edwards represented to Phifer that they had replaced certain quantities of SunScreen material, even though Suntrol and Edwards knew at the time, or recklessly disregarded the fact that the screening material replaced had actually been manufactured by a company other than Phifer.

38. Counterdefendants represented to Phifer that Suntrol had suffered significant and substantial loss to its business and was experiencing financial difficulties due to its participation in Phifer's warranty replacement program, even though Counterdefendants knew at the time that Suntrol had in fact been overcompensated by Phifer for replacement work that had not been done, for replacement of screening material that was not defective and/or was not covered by Phifer's warranty replacement program, for replacement of screening material that had not been manufactured by Phifer, and for quantities of SunScreen material in excess of the quantity actually replaced by Suntrol.

39. Counterdefendants intended that Phifer rely on the representations set forth in Paragraphs 33 through 38 above, and Phifer did in fact justifiably rely on such representations.

40. As a direct result of Phifer's justifiable reliance on Counterdefendants' representations alleged above, Phifer compensated Suntrol for work that was not done, for replacement of screens that were not defective and/or were not covered by the Phifer warranty replacement program, for screening material that was not manufactured or sold by Phifer and for quantities in excess of the actual quantities of SunScreen replaced.

41. As a further result of Counterdefendants' false representations, Phifer was induced to enter into the January 29, 1993 contract with Suntrol whereby Phifer agreed to, and did, in fact, pay Suntrol $100,000 additional compensation for past work performed and agreed to increase the rate of compensation paid to Suntrol for warranty replacement work performed subsequent to the contract.

42. But for Counterdefendants' false representations of fact, Phifer would not have paid compensation to Suntrol for work not performed and/or not covered by the warranty replacement program, for replacement of screening material that was not

manufactured by Phifer and for quantities of SunScreen material in excess of that actually replaced by Suntrol and would not have agreed to, nor entered into the January 29, 1993 contract with Suntrol.

COUNT THREE

(AZRAC)

43. Counterclaimant hereby incorporates by reference the allegations set forth in Paragraphs 1 through 42 above as if fully set forth herein.

44. By the acts alleged above, Counterdefendants, Suntrol and John Edwards have committed unlawful acts in violation of A.R.S. § 13-2301(C)(4) and A.R.S. § 13-2312 for the purpose of financial gain and such acts are chargeable and punishable by imprisonment for more than one year, such that Counterclaimant Phifer has suffered damage or injury as a result of such acts and Counterclaimant is entitled to recovery of treble or actual damages caused thereby, pursuant to A.R.S. § 13-2314.

COUNT FOUR

(Punitive Damages)

45. Counterclaimant hereby incorporates by reference the allegations set forth in Paragraphs 1 through 44 above as if fully set forth herein.

46. Counterdefendants, Suntrol and John Edwards, have acted willfully, wantonly and maliciously and with reckless disregard of the injuries and harm suffered by Phifer as a direct result of Counterdefendants' acts as alleged above, and, therefore, Counterdefendants have acted with an "evil mind" such that Counterdefendants are subject to imposition of punitive damages in an amount found sufficient to punish and deter Counterdefendants for their actions.

COUNT FIVE

(Attorneys' Fees - Pre-judgment Interest)

47. This action arises out of contract within the meaning of A.R.S. §

12-341.01 and Counterclaimant, therefore, is entitled to compensation for its reasonable costs and expenses incurred in this action, including reasonable attorneys' fees.

48. Pursuant to Paragraph 18 of the January 29, 1993 contract between Counterclaimant and Counterdefendants, Counterclaimant is entitled to recover its reasonable attorneys' fees, costs and necessary disbursements in this action to the extent related to enforcement or interpretation of said contract.

49. Counterclaimant is entitled to all costs, reasonable expenses and attorneys' fees, pursuant to A.R.S. § 13-2314, expended in this action related to Counterdefendants' violations of A.R.S. § § 13-2301 and 13-2312.

50. All overcharges, false claims for compensation and payments to Counterdefendants in amounts in excess of the agreed upon rate of compensation for replacement work actually completed and covered by Phifer's warranty replacement program including, but not limited to the $100,000 in compensation paid by Phifer to Counterdefendants under their January 29, 1993 contract, represent sums certain or amounts capable of ascertainment by calculation. Counterclaimant, therefore, is entitled to pre-judgment interest on all excess compensation paid to Counterdefendants from the date of such payment forward.

WHEREFORE, Counterclaimant prays that judgment be entered in its favor and against Counterdefendants individually and as to each of them as follows:

(1) Compensation in a sum to be determined at trial sufficient to fully compensate Counterclaimant for all damages and harm caused by Counterdefendants' wrongful activities;

(2) Rescission of the January 29, 1993 contract between Phifer and Counterdefendants and return of all monies paid to Counterdefendants under said contract, including but not limited to the $100,000 compensation paid to Suntrol, upon execution of said contract;.

(3) Treble actual damages, in an amount to be determined at trial, suffered by Phifer as a result of Counterdefendants' actions in violation of A.R.S. § 13-2301 and A.R.S. § 13-2312;

(4) Punitive damages, in an amount to be determined at trial, sufficient to punish Counterdefendants for their willful, wanton and malicious acts and deter similar future conduct;

(5) Prejudgment interest on all damages suffered by Counterclaimant that represent a sum certain or are capable of reasonable ascertainment by calculation;

(6) Counterclaimant's costs and reasonable attorneys' fees incurred in this action;

(7) Such other and further relief as the Court deems just and proper.

DATED this 27 day of May, 1993.

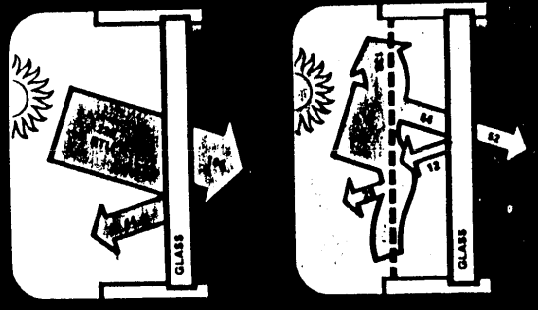
JENNINGS, STROUSS & SALMON

By Michael R Palumbo

Michael R. Palumbo
David B. Earl
One Renaissance Square
Two North Central
Phoenix, Arizona 85004-2393
Attorneys for Defendant/
Counterclaimant

396

HOW SOLAR SCREENS WORK



(1) The chart on left shows an unprotected glass at 40° N latitude in mid-summer. As much as 230 BTUs can fall on each square foot of glass.
(2) Right, same window with SunScreen installed. Up to 70% of the sun's heat and glare is reflected, absorbed and dissipated by SunScreen before it strikes the window surface.

BONUS BENEFITS

Protects against fading and sun rot
Provides daytime privacy
Lets in soft light and breezes
Reduces glare
Affords full 180° vision inside out

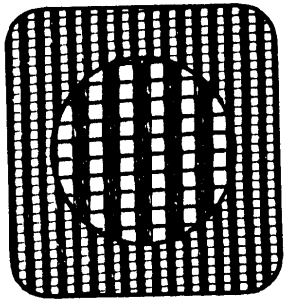
AS SEEN ON This Old House

SAVES ENERGY/REDUCES UTILITY BILLS

■ SunScreen instantaneously reduces the amount of solar heat gain by up to 70%. As a result, summertime air conditioning costs may be significantly reduced.

The savings on energy costs alone will usually pay for installation of SunScreen in two summers or less.

UNIQUE PATENTED WEAVE



■ SunScreen is woven from durable vinyl-coated Phifer-glass yarn. After weaving, SunScreen is heat-treated so as to insure a stable and quality product. The unique flat weave greatly reduces the possibility of damage.

BLOCKS THE SUN'S HEAT AND GLARE...

...NOT THE VIEW

COLOR COORDINATE WITH YOUR HOME

SunScreen is available in a variety of earthtones and may be color-coordinated to maintain and enhance the aesthetic values of any exterior.

SunScreen is a recommended practice as a solar cooling device and a recommended measure for solar heat gain retardation in the U.S. Department of Energy's Residential Conservation Services (RCS) Program.

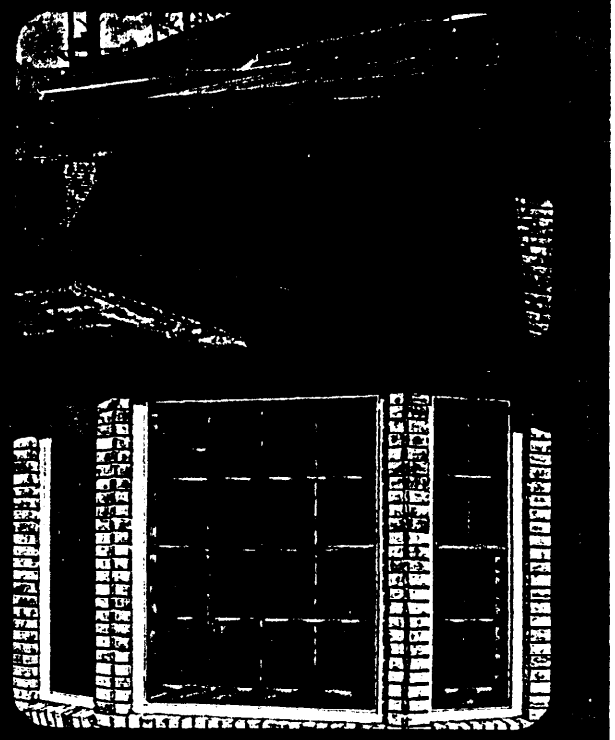
SunScreen is manufactured by Phifer Wire Products, Inc., Tuscaloosa, Alabama (Patent No. 4,002,188)

PHIFERGLASS SUNSCREEN
®ENERGY SAVING SOLAR SCREENING

REPLACES REGULAR SCREENING

E.I.R. EXHIBIT 19
APP. AZ Space Corp
DATE 6-10-11-93 INSPECTOR

ENJOY YOUR WINDOWS WHILE YOU SAVE ENERGY WITH SUNSCREEN



PHIFERGLASS
SUNSCREEN
ENERGY SAVING SOLAR SCREENING

■ Protect your windows and sliding glass doors against the sun's hot rays. SunScreen® reduces up to 70% of the sun's heat and glare before it enters your windows.

Improve Air Conditioning Efficiency • Lower Operating Costs

SunScreen® offers *year-round* comfort and economy.

EXTERIOR SHADING FOR WINDOWS/DOORS

■ Unlike films or glass coatings, SunScreen® stops the sun's heat and glare before it hits your windows and sliding glass doors. It's like having a shade tree in front of your window without blocking the view. Exterior shading can be many times more effective than most interior devices.

BLOCKS THE SUN'S HEAT AND GLARE . . . NOT THE VIEW

CUSTOM MADE AND INSTALLED

■ SunScreen® solar screens are custom made and installed on your windows for years of carefree enjoyment. SunScreen® installation is available for all types and shapes of windows and doors. Since SunScreen® serves the dual purpose of reducing the sun's heat and blocking even tiny insects, regular insect screens are no longer necessary. Yet the unique open weave construction of SunScreen® still allows soft light and gentle breezes to enter.

Judith Hayes, C.O., CECA

Marc J. Schoem, Director, CECA

David Schmeltzer, AEDCE

Eric C. Peterson, Executive Director

Jerry G. Thorn, General Counsel

Senator Donald W. Riegle, Jr.
United States Senate
c/o Central Regional Office
705 Washington Square Building
109 West Michigan Avenue
Lansing, Michigan 48933

Dear Senator Riegle:

This letter is in response to your correspondence of December 14, 1992 on behalf of your constituent Mary Golarz.

The U.S. Consumer Product Safety Commission (Commission) staff is presently following up on Ms. Golarz's concern regarding window screens manufactured by Phifer Wire Products Inc. of Tuscaloosa, Alabama. An assessment of the information obtained from Dr. K.S. Sidhu, on behalf of Ms. Golarz, is being conducted. At the conclusion of that assessment a further determination will be made as to appropriate Commission actions.

If there are any further questions, please do not hesitate to contact the Commission again.

Sincerely

Edward D. Harrill
Director
Office of Congressional Relations

399

DOCUMENT SUMMARY

Document Name : **/usr/caal/jph/RiegleCongress**
Document Title:
Operator :
Author :

Comments:

Prototype : <none>

Statistics

	Date/Time	Worktime	Keystrokes
Created	Tue Jan 12 1993 14:29	39:29	2667
Last Revised	Wed Jan 13 1993 09:28	17:18	445
Last Printed	Tue Jan 12 1993 15:09		
Last Archived	To:		
Last Retrieved	From:		

	Pages	Lines	Chars	Worktime	Keystrokes
Total	1	48	2303	56:47	3112

Concurrences

SYMBOL								
SURNAME								
DATE								

1/00

STATE OF MICHIGAN

To IECA
11/10/92

JOHN ENGLER, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH

3423 N. LOGAN/MARTIN L. KING JR., BLVD.
P.O. BOX 30195, LANSING, MICHIGAN 48909
Vernice Davis Anthony, Director

November 5, 1992

Mr. David Schmeltzer
Assistant Executive Director
Office of Compliance Enforcement
United States Consumer Products Safety Commission
Washington, D.C. 20207

Attention: Ms. Judith Hayes

Dear Mr. Schmeltzer:

This follows my telephone conversation November 5, 1992 with Ms. Judith Hayes. We have received some health complaints from citizens who have used window screens manufactured by Phifer Wire Products, Inc., P.O. Box 1700, Tuscaloosa, Alabama 35403-1700. These window screens were distributed prior to June 1989 (between 1988-89) by the Weathervane Window Incorporated, 4th Court, Brighton, Michigan 48116. It is possible that some of the window screens of the alleged batch may have been sold nationwide.

It has been alleged that as a result of interaction with sun rays, these window screens change color and emit toxic compounds causing indoor air pollution. As a result, some citizens have complained of some adverse health effects (allergies and chronic fatigue immune deficiency syndrome [CFIDS]).

We would appreciate it if CPSC investigate this alleged problem and take suitable actions (report, advisory, etc.). We will gladly cooperate with the CPSC in obtaining materials and information from the concerned citizens. In response to your request, I have enclosed copies of reports of the preliminary chemical analyses of the material from the window screens. Also, enclosed is the address and telephone numbers of the concerned citizen, manufacturer and the distributor. I hope that CPSC will take up this project. Please contact me (517-335-8362) for additional information.

I sincerely look forward to hearing from you at your earliest convenience.

Sincerely,

Kirpal S. Sidhu

Kirpal S. Sidhu, Ph.D.
Toxicologist
Division of Health Risk Assessment
FAX # (517) 335-9434

cc: John Hesse
Harold Humphrey
Mary Golarz

401

ADDRESSES AND TELEPHONE NUMBERS

Manufacturer

Phifer Wire Products, Inc.
P.O. Box 1700
Tuscaloosa, Alabama 35403-1700
Telephone: 205-345-2120

Distributor

Weathervane Window Incorporated
4th Court
Brighton, Michigan 48116
Telephone: 313-227-4900

Citizen(s)

Mrs. Mary Golarz
6710 Sun Valley Drive
Clarkston, Michigan 48348
Telephone: 313-391-1675

HEALTH EFFECTS GROUP, INC.
P.O. Box 31778 Tucson Arizona 85717 (602) 888-4442

Toxicology
Environmental Health
Industrial Hygiene

DETERMINATION OF VOLATILE EMISSIONS FROM SUNTROL WINDOW SCREEN MATERIAL

Suntrol Window Products
Suite 6
3767 E. Broadway
Phoenix, Arizona 85040

November 25, 1991

Clifton D. Crutchfield

Clifton D. Crutchfield, Ph.D.
Certified Industrial Hygienist

November 27, 1991
date

403

BACKGROUND

This analysis was generated in response to a request from John Edwards, President of Suntrol Window Products, concerning volatile emissions from degraded PVC window screens that had been installed by Suntrol. The visible degradation of installed screens was accompanied by a strong odor. Employee health complaints had been registered during removal and subsequent processing of the degraded screens.

Concern about possible adverse health effects associated with employee exposures to the volatile emissions generated the request to attempt a characterization of the emissions. It was noted during phone conversations with Mr. Edwards that the odor from the screens was more predominant during hot weather, and when large amounts of the degraded screen material were stored pending return to the manufacturer.

METHODOLOGY

Two sample panels of degraded screen material (approximately 1.5 square meters) were delivered by express carrier to the HEG office on 11-6-91. The panels was held in the carrier package at room temperature until 11-8-91, at which time approximately one-half of each panel was transferred into a 4 liter glass chamber for volatile emission sample collection. Prior to insertion of the screen samples, the glass chamber was cleaned and rinsed with distilled water.

The initial sampling strategy involved concentrating volatile emissions from the screen panels onto activated charcoal and silica gel adsorption tubes. The glass chamber was sealed with an aluminum foil cap containing three sampling ports. A glass tube was inserted through one port to the bottom of the chamber. This tube served as the source of make-up air during sample collection. The remaining two ports were used for the activated charcoal and silica gel vapor adsorption tubes used to collect volatile organic compound (VOC) emissions from the screen material.

Adsorption tube sampling was conducted outdoors to minimize potential interferences from the sample make-up air. The general air flow pattern during sampling was from the ambient environment into the bottom of the glass chamber, through the screen panels, and into the vapor adsorption tubes.

Both an activated charcoal tube (SKC 226-400/200 mg) and a silica gel tube (Supelco Orbo 53) were used for VOC adsorption. A sample flow rate of 0.6 liters/min over a sampling period of 167 minutes yielded a total sample volume of 100 liters through each adsorption tube. An identical sample collection train was used outside the glass chamber to collect simultaneous control samples of ambient air in the immediate vicinity of the sample chamber.

The sample tubes were submitted for analysis to the University of Arizona Mass Spectrometry Facility on 11/8/91. Solvent extractions of the tubes were completed using carbon disulfide (charcoal tubes) and ethanol (silica gel tubes).

A second sample collection procedure employed at the analytical laboratory involved a dynamic headspace/cryogenic trap/thermal desorption technique applied to a sample of the screen material in an attempt to enhance analytical sensitivity and to look for compounds that may have co-eluted with the sorbant tube extraction compounds. This sample was also analyzed with the gas chromatograph/mass spectrometer (GC/MS).

RESULTS AND DISCUSSION

GC/MS analysis of the charcoal and silica gel adsorption tubes showed a complex mixture of very volatile compounds which eluted early from the GC. Low levels of pthalates were also detected in the samples. Use of the cryogenic trap technique to further concentrate the early eluting volatiles revealed the major components to be four to seven carbon ketones, with methyl ethyl ketone (MEK) and methyl vinyl ketone (MVK, 3-buten-2-one) being the most abundant compounds. In addition to the ketones, other compounds detected at low levels included aliphatic hydrocarbons, aldehydes, trimethylsilanol, and benzene.

Pthalates are widely used as plasticizers. Physically, pthalates tend to be stable compounds with very low vapor pressures. Physiologically, pthalates represent one of the lowest toxicity classes used in industry. They have generally also exhibited a low order of toxicity in experimental animals.

As a class, the ketones tend to be volatile liquids with characteristic odors. At concentrations greater than 300 ppm (parts per million parts air), methyl ethyl ketone has been found to be irritating to the eyes, nose, and throat. It is also capable of causing nausea at such concentrations. No permanent adverse effects have been noted following exposures to MEK of over 700 ppm. The current threshold limit value for mean 8-hour exposures to MEK is 200 ppm; the short term exposure limit for 15 min. periods is 300 ppm.

Higher order ketones such as MVK tend to be more irritating and have more penetrating odors. MVK has been characterized as having a powerfully irritating odor. Threshold limit values have not been established for MVK.

EXECUTIVE SUMMARY

A sample of degraded PVC window screen material was submitted to Health Effects Group, Inc. for characterization of volatile organic compounds emitted from the material. Employee health related complaints are potentially associated with exposures to the emissions during handling and processing of the degraded screen material.

Volatile emissions from the screens were sampled with two different techniques and submitted for qualitative mass spectral analysis. A number of different volatile compounds were detected during analysis. The major compounds detected were several different ketones, which are generally not highly toxic but can be irritating with penetrating odors.

406

CONCLUSIONS

Gas chromatographic/mass spectral analysis showed that the primary volatile emissions detected in the head space of degraded PVC screen material were ketones, with methyl ethyl ketone and methyl vinyl ketone being the most predominant. While these compounds do not appear to be acutely toxic, they can be skin and respiratory system irritants with powerfully penetrating odors.

In the absence of information on actual exposure levels to these compounds during handling and processing of the degraded screen material, precautions to preclude excessive skin and respiratory exposures should be taken.

January 15, 1992

Mr. Anthony Gamble
Phifer Wire Products, Inc.
P.O. Box 1700
Tuscaloosa, AL 35403-1700

~~Bob Hoff~~
3-pages

Dear Anthony:

Below is a discussion of the progress we have made in assessing the source of the odor associated with the polymer coated fiberglass screening material you recently sent to us.

In order to qualitatively describe odors believed to be originating from polymer coated fiberglass screen material our laboratory utilized approximately 30 square centimeter samples of various aged and non-weathered screen material cut into 1 cm square pieces as representations of the bulk material.

These samples were introduced into glass vials and sealed with teflon crimp cap seals. The glass vials were placed in a Hewlett-Packard model 19354 Headspace Analyzer which was interfaced to a Hewlett-Packard model 5890 Gas Chromatograph using a Hewlett-Packard model 5971 Mass Spectrometer as detector. The column in the gas chromatograph was a 25 meter HP5. The headspace sampler was set to a total carrier flow of 90 ml/min, with auxiliary pressure set at 1.4 bar. The sample loop in the headspace analyzer had a 1 ml total volume. The split ratio on the gas chromatograph was 1:4, with a column head pressure of 4 psi. The gas chromatograph was operated isothermally at 120 degrees centigrade. The mass spectrometer scanned from 30 to 500 m/z.

Headspace optimization included sampling a mixed composite of aged and non-weathered samples of screen material at temperatures ranging from 50 degrees centigrade to 120 degrees centigrade. It was found that peak height of compounds originating from these samples increased with temperature until 110 degrees. At temperatures higher than this a broad non-specific peak appeared indicating possible degradation of the polymer material.

Analyses carried out on aged and non-weathered samples presented evidence that release of compounds from the samples increases with weathering. That is, weathered samples produced peak heights 10 -

The University of Alabama at Birmingham
309 Tidwell Hall • 720 South 20th Street • UAB Station
Birmingham, Alabama 35294-0008 • (205) 934-7032 • FAX (205) 975-6341

200 times larger than non-weathered samples.

The peaks from the gas chromatograph of these materials exhibited very low retention times indicating low mass, low boiling point, and possibly polar materials. Also, the peak areas were too small to obtain reliable mass spectral identification. However, comparison of these mass spectra with NBS standards indicated the following compounds as tentatively identified:

COMPOUND	CAS #
Ethanone, 1-cyclobutyl-	3019288
3-octen-2-one, 7-methyl-	33046810
1-Buranol, 3-methyl-, acetate	123922
2H-Pyran, 3,4-dihydro-6-methyl	16015115
[2,2'-Bifuran]-5,5'-dicarboxylic acid, 4	5905033
Propanamide, 2-methyl-	563837
1,2-Benzenedicarboxylic acids:	
diisooctyl	27554263
3-nitro	603112
diundecyl	3648202
diisodecyl	26761400
diheptyl	3648213
Aspidofractinine-3-methanol, (2.alpha.3	2656442

These compounds appear to be oxidation products of monomer material coated onto the fiberglass screen, various phthalates associated with plasticizers used in the manufacture of the polymer, and pigment used in coloring the screen material.

It cannot be overstressed that these are only tentative identifications. In order to further define these materials, a larger sample loop has been installed on the headspace analyzer, and a more polar column has been installed in the gas chromatograph. This should allow us to introduce more of the sample into the gas chromatograph/mass spectrometer, and allow for better separation of these oxidation products. Work is continuing on screen materials and on hand tool materials associated with screen installation.

We are in the process of re-analyzing these samples utilizing the modifications described above. We should have the results these analyses by the end of this week or the first part of next week. I will forward the results as soon as possible.

If you would like me to discuss the possible health effects of these compounds with any of your customers, please let me know and I will be more than happy to do so.

Sincerely yours,

Robert G. Meaks

410

attn: Kate Wallace, CR
From: Judith Hayes, CECA

P/2 have control # assigned to this material and have it sent back to us for response. Thanks!

JH 12/29/92

WS renewing 1/12/93

To Judy ☐ Urgent
Date ____ Time ____

WHILE YOU WERE OUT

M ____
Of ____ Judy 12/29/92 JH
Phone No ____

Telephoned		Please Call	
Was in to See You		Wants to See You	
Returned Your Call		Will Call Again	

Message
Send this to Kate Wallace for control # set. Attach to us!
MFM

By ____

411